

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A data transmission system for at least one of remote maintenance and diagnosis of an ~~automation~~automated manufacturing system, which is provided with an electronic firewall, said system comprising:

a first transmit/receive device disposed at a location of a remote user which sends a first e-mail message, via a data transmission system, to the ~~automation~~automated manufacturing system, wherein the first transmit/receive device includes

an instruction encoder which packages at least one instruction in the first e-mail message; and

a second transmit/receive device disposed at a location of the ~~automation~~automated manufacturing system to receive the first e-mail message sent by the remote user, wherein the second transmit/receive device includes

an instruction decoder which automatically identifies the instruction in the first e-mail message, and which automatically transmits the instruction to an application of the ~~automation~~automated manufacturing system for which the instruction is intended.

2. (currently amended): The system as claimed in claim 1, wherein the instruction sent by the first transmit/receive device is at least one of to control, operate and monitor the application of the ~~automation~~automated manufacturing system.

3. (currently amended): The system as claimed in claim 1, wherein the application comprises a component apparatus of the ~~automation~~automated manufacturing system.

4. (original): The system as claimed in claim 1,
wherein the first e-mail message sent from the first transmit/receive device contains an instruction which is operative to generate result information in the application, and
wherein the second transmit/receive device transmits the result information in the form of a second e-mail message, in a reverse direction, to the first transmit/receive device of the remote user.

5. (original): The system as claimed in claim 1, wherein the second transmit/receive device is configured to receive result information generated by the application and send the result information in a second e-mail message to the first transmit/receive device of the remote user.

6. (original): The system as claimed in claim 5, wherein the second transmit/receive device further comprises an encryption device which encrypts the result information contained in the second e-mail sent by the second transmit/receive device to the first transmit/receive device;
and

wherein the first transmit/receive device further comprises a decryption device which decrypts the result information contained in the second e-mail, at the location of the remote user.

7. (original): The system as claimed in claim 5, wherein the first e-mail and the second e-mail have, respectively, an identification field and a text field.

8. (original): The system as claimed in claim 7,
wherein the identification field includes an address field, a sender field, a date and time field, and a subject field; and

wherein the text field in the first e-mail includes the instruction which is to be transmitted to the application, and the text field in the second e-mail includes the result information sent to the first transmit/receive device.

9. (currently amended): A method for at least one of remote maintenance and diagnosis of an ~~automation~~automated manufacturing system, which is provided with an electronic firewall, the method comprising:

packaging at least one instruction in a first e-mail;

sending the first e-mail, by a remote user via a data transmission system;

receiving the first e-mail sent by the remote user at a location of the ~~automation~~automated manufacturing system;

identifying automatically, by the ~~automation~~automated manufacturing system, the instruction contained in the first e-mail; and

automatically forwarding the instruction to an intended application of the ~~automation~~automated manufacturing system for execution of the instruction.

10. (currently amended): The method as claimed in claim 9, further comprising,
formatting the instruction of the first e-mail to be for at least one of controlling, monitoring and operating the application of the ~~automation~~automated manufacturing system.

11. (original): The method as claimed in claim 9, further comprising:
generating result information by the application based on the execution of the instruction in the first e-mail; and
sending the result information from the second transmit/receive device in the form of a second e-mail to the first transmit/receive device of the remote user.

12. (original): The method as claimed in claim 11, further comprising:
encrypting the result information sent by the second transmit/receive device to the first transmit/receive device; and
decrypting, at the location of the remote user, the result information received from the second transmit/receive device.

13. (currently amended): A data transmission system for at least one of remote maintenance and diagnosis of an ~~automation~~automated manufacturing system shielded by an electronic firewall, said system comprising:

first transmit/receive means disposed at a location of a remote user for sending a first e-mail message to the ~~automation~~automated manufacturing system, wherein the first transmit/receive means includes

instruction encoder means for packaging at least one instruction in the first e-mail message to be transmitted; and

second transmit/receive means disposed at a location of the ~~automation~~automated manufacturing system for receiving the first e-mail message sent by the remote user, wherein the second transmit/receive means includes

instruction decoder means for automatically identifying the instruction in the first e-mail message, and automatically transmitting the instruction to an application of the ~~automation~~automated manufacturing system for which the instruction is intended.

14. (original): The system as claimed in claim 13,
further comprising a result generating means for generating result information in the application, and

wherein said second transmit/receive means is further for transmitting the result information in the form of an e-mail message to the first transmit/receive means of the remote user.

15. (currently amended): A data transmission system for at least one of remote maintenance and diagnosis of an ~~automation~~automated manufacturing system that has at least one application and that is provided within an electronic firewall, said system comprising:

a first communication device disposed at a location outside the firewall and communicating with the ~~automation~~automated manufacturing system through at least one of a first e-mail message and a second e-mail message, wherein the first communication device comprises:

an instruction processor that at least either (a) packages at least one instruction for the application into the first e-mail message or (b) receives result information generated by the application in the second e-mail message; and

a second communication device disposed at a location inside the firewall and relaying at least one of the instruction and the result information between the first communication device

and the ~~automation~~automated manufacturing system, wherein the second communication device comprises:

an instruction processor that at least either (a) receives the at least one instruction for the application in the first e-mail message and (b) automatically forwards the at least one instruction to the ~~automation~~automated manufacturing system, or (a) packages the result information generated by the application into the second e-mail message and (b) automatically transmits the result information in the second e-mail message.

16. (currently amended): A data transmission system for at least one of remote maintenance and diagnosis of an ~~automation~~automated manufacturing system, which is provided with an electronic firewall, said system comprising:

a first transmit/receive device disposed at a location of a remote user which sends a first e-mail message, via a data transmission system, to the ~~automation~~automated manufacturing system, wherein the first transmit/receive device includes

an instruction encoder which packages at least one instruction in the first e-mail message; and

a second transmit/receive device disposed at a location of the ~~automation~~automated manufacturing system to receive the first e-mail message sent by the remote user, wherein the second transmit/receive device includes

an instruction decoder which automatically identifies the instruction in the first e-mail message, and which automatically transmits the instruction to an application of the ~~automation~~automated manufacturing system for which the instruction is intended,

wherein the instruction sent by the first transmit/receive device is at least one of to control, operate and monitor the application of the ~~automation~~automated manufacturing system, and

wherein the second transmit/receive device is configured to receive result information generated by the application and send the result information in a second e-mail message to the first transmit/receive device of the remote user.

17. (currently amended): The system as claimed in claim 1, wherein the application of the ~~automation~~automated manufacturing system which receives the instruction is indicated in a subject field of the first e-mail message sent by the remote user.

18. (previously presented): The system as claimed in claim 1, wherein the second transmit/receive device is configured to receive result information generated by the application and automatically send the result information in a second e-mail message to the first transmit/receive device of the remote user.

19. (previously presented): The system as claimed in claim 1, wherein the at least one of remote maintenance and diagnosis is automatically executed upon the second transmit/receive device receiving the first e-mail message.

20. (currently amended): The method as claimed in claim 9, wherein the at least one of remote maintenance and diagnosis is automatically executed upon the receiving the first e-mail at the location of the ~~automation~~automated manufacturing system.

21. (previously presented): The system as claimed in claim 13, wherein the at least one of remote maintenance and diagnosis is automatically executed upon the second transmit/receive means receiving the first e-mail message.

22. (previously presented): The system as claimed in claim 16, wherein the at least one of remote maintenance and diagnosis is automatically executed upon the second transmit/receive device receiving the first e-mail message.